

Press Release

nova-Institut GmbH (www.nova-institut.eu)
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New concepts for the sustainable use of wood: a bio-refinery in the Westerwald?

In Langenbach bei Kirburg, the nova-Institute has presented the EU project BIOCORE to representatives of the regional wood industry. BIOCORE is one of the three large bio-refinery projects that are being funded as part of the European Commission's 7th Framework Programme. The idea is to make particularly efficient use of biomass, such as straw or wood to produce chemicals and plastics.

The nova-Institute based in Hürth in the Rhineland is working on a bio-refinery case study for the EU-funded BIOCORE project. In this framework practical trials will be performed in the coming months by BIOCORE partners CIMV, VTT and ECN.

In this context, the nova-Institute presented the EU-funded BIOCORE project to representatives of the regional timber industry in Langenbach bei Kirburg on 28th February 2012. BIOCORE is one of the three large bio-refinery projects that are being funded as part of the European Commission's 7th Framework Programme. The idea is to make particularly efficient use of biomass, such as straw or wood to produce chemicals and plastics. Present refineries use oil and natural gas to obtain the elements that chemical, plastics and fuel industries require. Not only is this a source of CO₂ emissions, and thus contributes to climate change, but it also poses a serious risk for the future to a great many industries in the face of rising oil prices.

The BIOCORE project studies the entire value chain from the raw material – biomass - through to its many different intermediate and end products, e.g. bio-based plastics and adhesives. The starting point for the process is an organosolv process patented by the French company CIMV (*Compagnie Industrielle de la Matière Végétale*), which fractionates the biomass into its three main components: cellulose, hemicellulose and lignin. These components will then be converted into a wide variety of products by biotechnological and (thermo-)chemical processes that are being developed and refined during the project. These processes are then finally assessed for their economic, environmental and social sustainability.

Four case studies are being conducted in order to develop and assess the new bio-refinery concept as concretely as possible, each of these studies assuming a specific catchment area for the biomass supply and a specific biomass mix. Along with regions in France (wheat straw), Hungary (short-rotation coppice wood, wheat straw and hardwoods) and India (rice and wheat straw), a German region was selected for research into a bio-refinery, supplied with hardwoods and possibly softwoods.

This region covers North Rhine-Westphalia, Rhineland-Palatinate, Hessen and Saarland, since this area was identified as containing the largest accretion of deciduous forest. nova-Institute organised a workshop on 28th February 2012 at Mann Energie's company training workshop in Langenbach bei Kirburg (Westerwald) to present the concept to regional actors. Representatives from the wood pellet sector (Westerwälder Holzpellets, German Pellets), sawmills (Ilim Timber, van Roje), private forest owners (Hatzfeld-Wildenburg) and the Rhineland-Palatinate forestry office all participated in the event.

There was great interest in the new technology, mainly because it is seen as a potential new market for timber that would make extremely efficient use of timber resources and generate a high level of regional added value. This fits in well with the industry's strategy of using timber in the most sustainable and efficient manner possible, generating a maximum of added value within, and for, the region. The aforementioned region currently exports a large amount of wood. This project would enable these volumes to be profitably utilized within the region.

However, it will still be some years before this comes about, because oil prices partly determine the economic competitiveness of new technologies. The case study demonstrates, though, that when that time comes, our region will be in a great position. The case study assumes the biomass requirements of a plant to be 150,000 t of dry mass (DM), which represents about 2% of the (on average) 7 million tonnes DM logged annually. Competition for timber resources has of course already increased noticeably in recent years, and it will therefore

be crucial in the future to use scarce resources in a sustainable way, adding as much value as possible. Bio-refinery technology offers some interesting prospects in this regard, being able to supply chemicals to the major chemical companies, situated around Cologne, Leverkusen, Düsseldorf and Frankfurt, which means that raw material suppliers and buyers could complement each other perfectly.

While it is already known that hardwood works well in the CIMV technology, there are still obstacles in refining softwood. However, if softwood could also be refined, the feedstock base could be substantially expanded, since coniferous trees constitute 43% of the forest area in the case study region. Therefore, the project partners VTT (Finland), ECN (Netherlands) and CIMV (France) will conduct tests with different softwood materials in the coming months.

V.i.S.d.P.:

Dipl.-Phys. Michael Carus, (Managing Director), nova-Institut GmbH, Chemiepark Knapsack, Industriestrasse 300, 50354 Hürth, Germany, www.nova-institut.eu, contact@nova-institut.de, +49 (0) 2233 48 14 40.

A picture of the event from February 28th 2012 can be downloaded from the following link (please reproduce the photo credit): www.nova-institut.de/pdf/Stakeholder-Meeting.jpg.

- Stakeholder-Workshop (f.l.t.r.): Dr. Stephan Piotrowski (nova-Institut GmbH), Till Eismann (German Pellets), Horst Womelsdorf (Landesforsten Rheinland-Pfalz), Dr. Norbert Heidingsfeld (Landesforsten Rheinland-Pfalz), Björn Stelter (Hatzfeldt-Wildenburg'sche Verwaltung), Oliver Mühlme (van Roje), Markus Mann (Westerwälder Holzpellets), Hauke Jungjohann (Ilim Timber). (Photo: nova-Institut)